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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/372,531 08/11/99 BOHNSTEDT

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EXAMINER

IM52/0703

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ART UNIT

PAPER NUMBER

1745

DATE MAILED:

07/03/01

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/372,531

Applicant(s)
Bohnstedt et al.

Examiner
Tracy Dove

Art Unit
1745



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 Apr 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-14 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

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DETAILED ACTION

This Office Action is in response to the communication filed on 4/20/01. Applicant's arguments have been considered, but are moot in view of the new grounds of rejection. Claims 1-9 and 11-14 remain rejected in view of the prior art of record. This Action is made **Non-Final**.

Claim Objections

The objections to the claims have been overcome by amendment and are withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 9 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the continuous ribs" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites "The separator as defined in claim 1 containing an electrode plate", which is unclear because the separator cannot include an electrode. Examiner suggests "The separator as defined in claim 1 containing an electrode plate in a pocket of said separator". Claim 9 further

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recites the ribs are contained on the electrode plate. It is unclear if the separator has any ribs or if the separator contains only studs. Claim 9 appears to be inconsistent with claim 1.

Claim 13 recites "said separator being provided in the form of a roll", which does not distinctly claim the invention. The separator material is stored on a roll, but it is unclear how this relates to the subject matter being claimed. It is unclear if the claim is stating the separator is in roll form in the battery.

The 35 USC 112, second paragraph, rejections of claims 1-5, 7, 8, 11, 12 and 14 have been withdrawn.

To the extent the claims are understood in view of the rejections above, note the following prior art rejections.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willmann et al., US 5,250,372.

Willmann teaches a lead-acid battery having a negative electrode, a positive electrode and an electrolyte-immobilizing mat (separator). The mat includes hemispherical protuberances

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(studs) for spacing the separator from the adjacent electrodes. The hemispherical protuberances (spherical caps) project from the separator and are preferably on both sides of the separator. Alternatively, the protuberances may project from only one side to space the separator from only one electrode and it is preferred that the protuberances be on the face of the separator which is destined to abut the positive electrode. In another embodiment of Willmann, the separator includes a plurality of rib-like protuberances. The ribs are preferably discontinuous from top to bottom. See col. 9, lin 27-63. Figs. 9 and 10 show the separator wrapped around, or enveloped about, the bottom edge of the negative electrode. An envelope structure is considered a pocket structure.

Willmann does not explicitly teach a separator having both hemispherical protuberances and rib-like protuberances.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because Willmann teaches that separators for lead-acid battery are known to have hemispherical or rib-like protuberances. One of skill in the art would have known that the separator could be provided with a combination of hemispherical and rib-like protuberances because both types of protuberances function to space the separator from the electrode plate.

Willmann does not explicitly teach the ribs are formed of a different material than the separator sheet.

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However, irrespective of how the separator ribs are made, the products are the same. Thus, whether the ribs are formed integrally with the separator or the ribs are formed of a different material than the separator, or any other method of manufacturing the separator ribs is used, the separators, as an end result, are the same. Furthermore, the courts have held that when similar products are produced, the product-by-process limitations are obvious. In re Brown 173 USPQ 685, In re Fessman 180 USPQ 324.

Willmann teaches the ribs are preferably discontinuous, but the skilled artisan would know that the ribs could be either discontinuous or continuous. Willmann teaches that discontinuous ribs (versus continuous ribs) facilitate more rapid filling of the cell element with acid. A negative teaching in the art is still considered a teaching.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes et al., US 4,396,689 "Grimes".

Grimes teaches an electrochemical cell with a novel separator-spacer. The separator-spacer sheet has a microporous mid-portion surface which is recessed from the non-porous surface of the sides. Projections on the microporous mid-portion surfaces are designed to maintain a spaced compartmental distance between the separator-spacer surface and the flat conductive surfaces of adjacent electrode sheets. The projections provide structural means against collapse of the separator-spacer mid-portion surface upon the electrode sheet. The projections are usually designed as pebbles (studs), but may also be rod-shaped (ribs). The

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projections may also be a combination of pebble and rod-shaped protuberances as depicted in Figs. 7c, 7cc, 7d and 7dd. See col. 5, lin 1-25. Figure 7c clearly shows the claimed invention. Figure 7cc shows the pebbles are the same height as the rod-shaped protuberances.

Grimes does not explicitly teach the separator is provided in the form of a roll.

However, the invention would have been obvious to one of ordinary skill in the art at the time the invention was made because separator material is commonly stored in rolls before needed in the battery manufacturing process. Furthermore, the limitation is not given patentable weight because it does not limit the battery separator for a storage battery. How a separator material is stored is not relevant to the claimed battery product.

Response to Arguments

Applicant's arguments with respect to claims 1-9 and 11-14 have been considered but are moot in view of the new ground(s) of rejection.

Note that claim 13, rejected in view of Grimes, does not require "a pocket" or that the separator be used in "a lead-acid battery".

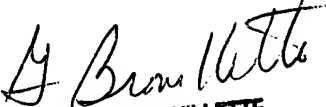
Note the amendment filed 4/20/01 indicates that claim 6 is unchanged. However, claim 6, as it appears in the amendment, is not the same as claim 6, originally filed (see page 12 of specification). It appears that a word processing error occurred and original claim 5 was copied as claim 6 in the amendment. Appropriate correction is required.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached *Monday, Wednesday & Thursday from 7:30 AM - 7:00 PM*. My supervisor is Gabrielle Brouillette, who can be reached at (703) 308-0756. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax number is (703) 305-3599.

June 28, 2001


GABRIELLE BROUILLETTE
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